

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. – 2. (canceled)

3. (currently amended) A work support and management system for a working machine, which supports and manages work carried out by a working machine, said system comprising:

first storage means used for arithmetic operations and storing the state of a working region where said working machine carries out work;

~~first~~ second storage means ~~used~~ dedicated for display only and storing the state of said working region ~~where said working machine carries out the work for~~ display prepared by using the state of the working region stored in said first storage means;

~~second~~ third storage means for storing the relationship between the state of said working region stored in said second storage means and a discriminative display method;

~~third storage means used for arithmetic operation and storing the state of said working region;~~

and

display means for displaying the state of said working region,

wherein said display means includes first processing means for obtaining discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of the state of said working region stored in said ~~first~~ second storage means, and for displaying the state of said working region in a discriminative manner, and second processing means for obtaining work data based on data stored in said ~~third~~ first storage means and displaying the obtained work data;

wherein said working region is represented in units of mesh indicating a plane of a predetermined size, and said ~~first~~ second storage means stores the state of said working region per mesh;

wherein said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of the state of said working region stored in said ~~first~~ second storage means per mesh, and displays the state of said working region per mesh in a discriminative manner;

wherein said second storage means stores the discriminative display method in color-coded representation; and

wherein said first processing means displays the state of said working region in a color-coded manner.

4. (canceled)

5. (previously presented) A work support and management system for a working machine, which measures and displays the three-dimensional position and

state of a working machine, thereby supporting and managing work carried out by said working machine, said system comprising:

first storage means used for display and storing, as the state of said working region where said working machine carries out the work, at least one of the current state of said working region, the state of said working region before the start of the work, and a target value of the work;

second storage means for storing the relationship between the state of said working region and a discriminative display method;

third storage means for storing the three-dimensional position and state of said working machine;

fourth storage means for storing the current state of said working machine;

fifth storage means for storing at least one of the state of said working region before the start of the work and the target value of the work;

sixth storage means for storing work data of said working machine; and

display means for displaying the state of said working region,

wherein said display means includes selection means for selectively displaying a plurality of screens corresponding to working processes, first processing means for, when any of said plurality of screens is selected, obtaining discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means, and displaying the state of said working region in a discriminative manner, and second processing means for, when any of said plurality of screens is selected, obtaining the work data of the working region based on data stored in related one or more of said

first, third, fourth and fifth storage means, displaying the obtained work data, and storing the obtained work data in said sixth storage means, and

wherein said working region is represented in units of mesh indicating a plane of a predetermined size, and said first, fourth and fifth storage means stores the state of said working region per mesh; and

wherein said first processing means obtains the discriminative display data by referring to the relationship stored in said second storage means on the basis of the state of said working region stored in said first storage means per mesh, thereby displaying the state of said working region per mesh in a discriminative manner, and said second processing means obtains the work data per mesh based on the data stored in related one or more of said first, third, fourth and fifth storage means, thereby displaying the obtained work data.

6. (canceled)

7. (previously presented) The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means includes a work plan screen; and

wherein when said selection means selectively displays the work plan screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said second storage means on the basis of, among the data stored in said first storage means, data regarding at least one of the state of said working region before the start of the work and the target value of the work, thereby

displaying at least one of the state before the start of the work and the target value of the work in a discriminative manner, and said second processing means computes and displays a target work amount based on the data stored in said fifth storage means, and stores the target work amount in said sixth storage means.

8. (previously presented) The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means includes a during-work screen; and

wherein when said selection means selectively displays the during-work screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said second storage means on the basis of, among the data stored in said first storage means, data regarding the current state of said working region, thereby displaying the current state of said working region in a discriminative manner, while displaying the position and state of said working machine in superimposed relation to the state of said working region based on the data stored in said third storage means, and said second processing means computes and displays the data regarding the position and state of said working machine based on the data stored in said third storage means.

9. (previously presented) The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means includes an after-work screen; and

wherein when said selection means selectively displays the after-work screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said second storage means on the basis of the data stored in said first storage means, thereby displaying the state of said working region after the work in a discriminative manner, and said second processing means computes and displays an amount of the work made on that day based on, among the data stored in said fourth storage means, the data regarding the current state of said working region, and stores the amount of the work made on that day in said sixth storage means.

10. (previously presented) The work support and management system for a working machine according to Claim 5,

wherein said plurality of screens selectively displayed by said selection means includes a total-work completion screen; and

wherein when said selection means selectively displays the total-work completion screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said second storage means on the basis of, among the data stored in said first storage means, data regarding the current state of said working region, thereby displaying the state of said working region after the completion of total work, and said second processing means computes and displays a total amount of completed work based on the data stored in said fourth storage and the data stored in said fifth storage, and stores the quality management information in said sixth storage.

11. (previously presented) The work support and management system for a working machine according to Claim 5,

wherein said second storage means stores the discriminative display method in color-coded representation; and

wherein said first processing means displays the state of said working region in a color-coded manner.

12. (currently amended) The work support and management system for a working machine according to ~~Claim 1~~ Claim 3, wherein said working machine is a hydraulic excavator, and the state of said working region is represented by a landform of said working region.

13. (currently amended) The work support and management system for a working machine according to ~~Claim 1~~ Claim 3, wherein said working machine is a mine sweeping machine, and the state of said working region is represented by the presence or absence of mines buried in said working region and the mine type.

14. (currently amended) The work support and management system for a working machine according to ~~Claim 1~~ Claim 3, wherein said working machine is a ground improving machine, and the state of said working region is represented by positions where a solidifier is loaded and an amount of the loaded solidifier.

15. (currently amended) A work support and management system for a working machine, which supports and manages work carried out by a working machine, said system comprising:

first storage means used for arithmetic operations and storing the state of a working region where said working machine carries out work, including the state during work obtained based on sensor values of the working machine;

~~first~~ second storage means dedicated for display only and storing, ~~as display data, the state of said working region where said working machine carries out the work for display prepared by using the state of the working region stored in said first~~ storage means;

~~second~~ third storage means for storing the relationship between the state of said working region stored in said second storage means and a discriminative display method;

~~third storage means used for arithmetic operation and storing the state of said working region including the state during work obtained based on sensor values of the working machine; and~~

display means for displaying the state of said working region at least in a during-work screen,

~~said first storage means storing the state of the working region as display data based on the state of the working region stored in said third storage means;~~

wherein said display means includes first processing means for obtaining discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of the state of said working region stored as display data in said ~~first~~ second storage means, and for displaying the state of said working

region in a discriminative manner, and second processing means for obtaining work amount data based on data stored in said ~~third~~ first storage ~~means~~ means and displaying the obtained work amount data;

wherein said display means displays said working region in said during-work screen in units of mesh indicating a plane of a predetermined size;

wherein said ~~first~~ second storage means stores the state of said working region ~~as display data per mesh based on the state of the working region stored in said third storage means~~; and

wherein said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of the state of said working region stored in said ~~first~~ second storage means per mesh, and displays the state of said working region per mesh in a discriminative manner.

16. (currently amended) The work support and management system for a working machine according to Claim 15,

wherein said system further comprises fourth storage means for storing work amount data of said working machine;

wherein said display means further includes selection means for selectively displaying a plurality of screens corresponding to working processes and including said during-work screen;

wherein said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of the state of said working region for display stored in said ~~first~~ second storage means

and displays the state of said working region in a discriminative manner when any of said plurality of screens is selected; and

wherein said second processing means obtains the work amount data of the working region based on data stored in said ~~third~~ first storage means, displays the obtained work amount data, and stores the obtained work amount data in said fourth storage means when any of said plurality of screens is selected.

17. (currently amended) The work support management system for a working machine according to Claim 16,

wherein said plurality of screens selectively displayed by said selection means includes a work plan screen; and

wherein when said selection means selectively displays the work plan screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of, among the data stored in said ~~first~~ second storage means, data regarding at least one of the state of said working region before the start of the work and the target value of the work, thereby displaying at least one of the state before the start of the work and the target value of the work in a discriminative manner, and said second processing means computes and displays a target work amount based on the data stored in said ~~third~~ first storage means, and stores the target work amount in said fourth storage means.

18. (currently amended) The work support and management system for a working machine according to Claim 16,

wherein said plurality of screens selectively displayed by said selection means includes said during-work screen; and

wherein when said selection means selectively displays the during-work screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of, among the data stored in said ~~first~~ second storage means, data regarding the current state of said working region, thereby displaying the current state of said working region in a discriminative manner, while displaying the position and state of said working machine in superimposed relation to the state of said working region based on sensor values of the working machine, and said second processing means computes and displays the data regarding the position and state of said working machine based on the sensor values of the working machine.

19. (currently amended) The work support and management system for a working machine according to Claim 16,

wherein said plurality of screens selectively displayed by said selection means includes an after-work screen; and

wherein when said selection means selectively displays the after-work screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of the data stored in said ~~first~~ second storage means, thereby displaying the state of said working region after the work in a discriminative manner, and said second processing means computes and displays an amount of the work made on that day based on, among the data stored in said ~~third~~ first storage means, the data regarding

the current state of said working region, and stores the amount of the work made on that day in said fourth storage means.

20. (currently amended) The work support and management system for a working machine according to Claim 16,

wherein said plurality of screens selectively displayed by said selection means includes a total-work completion screen; and

wherein when said selection means selectively displays the after-work screen, said first processing means obtains the discriminative display data by referring to the relationship stored in said ~~second~~ third storage means on the basis of, among the data stored in said ~~first~~ second storage means, data regarding the current state of said working region, thereby displaying the state of said working region after the completion of total work, and said second processing means computes and displays a total amount of completed work based on the data stored in said ~~third~~ first storage means, and stores the quality management information in said fourth storage means.

21. (currently amended) The work support and management system for a working machine according to Claim 15,

wherein said ~~second~~ third storage means stores the discriminative display method in color-coded representation; and

wherein said first processing means displays the state of said working region in a color-coded manner.

22. (previously presented) The work support and management system for a working machine according to Claim 15, wherein said working machine is a hydraulic excavator, and the state of said working region is represented by a landform of said working region.

23. (previously presented) The work support and management system for a working machine according to Claim 15, wherein said working machine is a mine sweeping machine, and the state of said working region is represented by the presence or absence of mines buried in said working region and the mine type.

24. (previously presented) The work support and management system for a working machine according to Claim 15, wherein said working machine is a ground improving machine, and the state of said working region is represented by positions where a solidifier is loaded and an amount of the loaded solidifier.